

[0037] In some embodiments, in order to move with the rest of bag container 200 (e.g., during expansion or compression), corner reinforcement insert 250 may have folds 256 that match container folds 220, as shown in FIG. 8. Other reinforcement inserts may also have such folds 256. In some embodiments it may have edges that align with folds 256, as shown in FIG. 8. For example, corner reinforcement insert 250 may have a bottom portion 252 and a side portion 254.

[0038] In some embodiments bottom portion 252 may be rectangular in order to correspond to the shape of the portion of bottom panel 212 that it corresponds to, while extending a consistent distance past bottom corner 214 to contribute strength across bottom corner 214 (e.g., extending at least 10 millimeters past bottom corner 214, such as between 10 and 20 millimeters). In some embodiments bottom portion 252 may be a tab, such as the semicircular tab shown in FIG. 14, in order to provide strength across a container fold while covering a minimal panel area (e.g., of bottom panel 212). Side portion 254, in the case where it does not extend past gusset folds 228, may be triangular in order to extend past bottom corner 214 while avoiding interference with gusset folds 228. In the case where side portion 254 does extend past gusset folds 228, side portion 254 may be triangularly shaped in order to correspond to and extend a consistent distance past gusset folds 228 to contribute strength across gusset folds 228 (e.g., extending at least 10 millimeters past bottom corner 214, such as, for example, between 10 and 20 millimeters).

[0039] In some embodiments, corner reinforcement insert 250 is formed of the same paper material as the rest of bag container 200 (e.g., SBS paper having at least 50% post-consumer content (e.g., 60% post-consumer content, or greater than 60% post-consumer content)). This helps give it a low environmental impact similar to the rest of bag container 200, thereby contributing to the low environmental impact of bag 100 overall.

[0040] Since an item carried within bag 100 will typically apply force to bag 100 at bottom panel 212, due to the gravitational attraction of the item to the earth, areas near the bottom of bag 100 may be most susceptible to tearing. As described above, corner reinforcement insert 250 may be disposed across a bottom corner 214 of bag container 200—near the bottom of bag 100. In some embodiments bag 100 includes a bottom reinforcement insert 260. Bottom reinforcement insert 260 may span the most of the inside surface of bottom panel 212 (e.g., greater than 90% of the inside surface of bottom panel 212). In some embodiments bottom reinforcement insert 260 spans the entirety of the inside bottom surface of bottom panel 212, thereby masking seams on bottom panel 212 (e.g., from expansion fold 226 or edges of corner reinforcement inserts 250). Bottom reinforcement insert 260 may contribute strength to bag container 200, reducing its risk of tearing (e.g., due to the weight of an item contained therein).

[0041] In some embodiments, bottom reinforcement insert 260 is separate from the rest of bag container 200, and is not fixed directly thereto. In such embodiments, bottom reinforcement insert 260 may not have any folds. In some embodiments, bottom reinforcement insert 260 may be fixed to bottom panel 212 of bag container 200 (e.g., by tape or adhesive). In such embodiments, bottom reinforcement insert 260 may have a fold corresponding to expansion fold 226 of bottom panel 212, or may be fixed to only one side of expansion fold 226. Fixing bottom reinforcement insert 260 to the

rest of bag container 200 helps retain it therein, and helps ensure consistent proper placement and operation of bottom reinforcement insert 260.

[0042] In some embodiments bottom reinforcement insert 260 overlaps a portion of corner reinforcement insert 250. Such overlap may help transfer force applied to bottom insert 260 to corner reinforcement insert 250, so that they can work together to carry the load applied by an item carried within bag 100.

[0043] In some embodiments, bottom reinforcement insert 260 is formed of the same paper material as the rest of bag container 200 (e.g., SBS paper having at least 50% post-consumer content (e.g., 60% post-consumer content, or greater than 60% post-consumer content)). This helps give it a low environmental impact similar to the rest of bag container 200, thereby contributing to the low environmental impact of bag 100 overall.

[0044] In some embodiments, an upper portion of bag container 200 is folded over on itself along a top edge fold 222 to form a collar 230 about an opening 280 of bag container 200, such that top edge fold 222 defines a top edge 210 of bag container 200. FIG. 9 is a cross-sectional view taken along line 9-9 of FIG. 1, through a single side panel 216 of bag container 200, at an area where bag handle 300 is fixed thereto. As shown in FIG. 9, the inner portion of bag container 200 that is folded over forms inner collar layer 238, and the outer portion of bag container 200 over which inner collar layer 238 is folded forms outer collar layer 236.

[0045] In some embodiments, top edge 210 includes notches 232 formed therein (see, e.g. FIGS. 1, 7, and 8). Each end 302 of bag handle 300 may extend through a notch 232 and between inner collar layer 238 and outer collar layer 236, and may be fixed therebetween (e.g., by adhesive 270).

[0046] In some embodiments, a collar reinforcement insert 234 is disposed between inner collar layer 238 and outer collar layer 236. In some embodiments collar reinforcement insert 234 may be fixed to one or both of inner collar layer 238 and outer collar layer 236 (e.g., by adhesive). Collar reinforcement insert 234 may be formed of corrugated paper (including, e.g., corrugated cardboard). Typical reinforcement inserts near a bag's upper edge are formed using non-corrugated gray board. Gray board is less flexible than corrugated paper, and prone to unsightly and structurally compromising creasing, delamination, and detachment upon use (e.g., by opening and closing a bag). The fluting and higher integrity of corrugated paper helps collar 230 flex as forces are applied through it from bag handle 300 to the rest of bag container 200, instead of creasing, delaminating, or detaching. This helps maintain the high integrity of collar 230 and promotes a flexible opening 280 to bag 100, making it easier to insert or remove items.

[0047] In some embodiments, collar reinforcement insert 234 is a single-layer insert disposed between inner collar layer 238 and outer collar layer 236 (see, e.g., FIG. 9). In some embodiments, collar reinforcement insert 234 is a multi-layer insert disposed between inner collar layer 238 and outer collar layer 236 (see, e.g., FIG. 13). In the dual-layer embodiment of FIG. 13, collar reinforcement insert 234 may be folded over on itself along with inner collar layer 238 and outer collar layer 236, along fold 256. In such embodiments ends 302 of handle 300 may also be disposed between layers of collar reinforcement insert 234, thereby contributing additional strength to the fixing of ends 302 to bag container 200 at anchor points 306.